

Remarks

Claims 1-6, 8-20 and 22-27 are pending in this application.

In paragraph 3 of the Action, Examiner rejects claims 1-4 and 6-18 under 35 USC 102(b) as being anticipated by Hofer et al. By the instant amendment, Applicant has further distinguished the present invention over the prior art, whether taken singly or in combination. Particularly, Applicant's invention is characterized by an inspection system for an ophthalmic lens capable of directing light only into the peripheral edge of the lens such that the lens will behave as a fiber optic and internally reflect the light with the light exiting the lens only at the location of markings on the lens as well as the peripheral edge of the lens. This is a totally opposite approach to systems employing a so-called dark field illumination where light is directed through the entire lens from the concave surface to the convex surface thereof (see p. 1, last sentence of specification). In Applicant's system, total internal reflection means that clear areas of the lens will appear dark and markings on the lens will appear bright. This is completely opposite to what is happening in the Hoffer et al system which passes light through the surfaces of the lens such that clear areas appear bright and markings as well as the edge of the lens appear dark. This difference in operating principles is apparent when one considers the structure of the two systems. Hofer et al places the lens on a glass surface which is located between a light source and an imaging device. The light is directed through the glass surface and entire lens body and the light passing therethrough is picked up by the imaging device. The light which is obstructed by markings on the lens body does not pass through and these areas thus appear as dark spots to the imaging device. Applicant's device, on the other hand, provides a light source which extends in a 360 degree circle, the circle having a center, the light rays directed through an aperture radially inward toward the center. The lens is suspended in air by a vacuum head (as opposed to being placed on a glass plate), and is positioned radially inward of the aperture such that the light rays enter the lens at the peripheral edge thereof. The Hofer et al device places the lens above the light source and the light source is not a 360 degree source which directs light rays inwardly toward the center of the 360 degree circle. Based on these very distinct differences in both structure and function, removal of the section 102(b) rejection to the claims is warranted.

Claims 5-6, 19-20 and 22-27 stand rejected under 35 USC 103(a) as being unpatentable over Hofer et al in view of Lafferty et al ('573).

Examiner first states that "regarding claims 5-6, 8 and 19-20, Hofer et al teaches all of the features in the claimed invention as claims 1 and 16 except for a light source in an annular LED array." For all the reasons explained above with respect to the section 102(b) rejection, Hofer et al does not include "all the features in claimed invention as claims 1 and 16." Particularly, Hofer et al does not teach:

"...directing structured, diffuse light at the entire 360° peripheral edge of the lens such that the structured light enters the lens only at the peripheral edge thereof and internally reflects within the lens..."(as stated above, Hofer et al directs light from beneath the lens and the light is directed to pass through the lens body from the concave surface to the convex surface thereof).

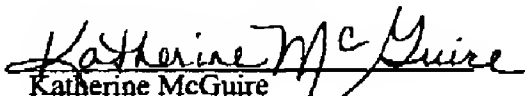
Further, Hofer et al does not teach:

"...wherein the internally reflected light diffracts upon encountering a marking on the lens, whereby clear areas of the lens appear dark due to said internal light reflection, and one or more markings on the lens appear bright due to said internally reflected light scattering and exiting the lens at said one or more markings." (as stated above, the Hofer et al system relies on dark field illumination and back-lighting such that the opposite occurs, i.e., clear areas of the lens appear bright and markings appear dark. As explained in the Background section of the specification, "This back-lighting method of lens inspection is imperfect in that, by lighting the entire lens to the camera, particularly small defects tend to be overwhelmed by the high background signal and may therefore be missed by the inspection system." (P.1, last sentence of specification).

The primary reference of Hofer et al therefore fails to teach "all elements...except for a light source in an LED array." For this reason, the section 103(a) rejection to the claims based on Hofer et al and Lafferty et al is improper and should be revoked.

Based on the foregoing amendment and Remarks, reconsideration and allowance are respectfully requested.

Respectfully submitted,


Katherine McGuire
Reg. No. 33,537

Bausch & Lomb Incorporated
One Bausch & Lomb Place
Rochester, New York 14604
Phone: (585) 338-5526
Dated: October 10, 2003

RECEIVED
CENTRAL FAX CENTER

OCT 10 2003

OFFICIAL